APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/672,198	09/26/2003	Michael Douglass	47303-P002US	8961

61060   7590   12/20/2007
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ART UNIT	PAPER NUMBER
2616	

MAIL DATE	DELIVERY MODE
12/20/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 October 2007*.

2a)☒ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-32* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some *   c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   Claims 1-32 are currently pending in the application.

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2.   Claims 1-4, 10, 11, 13-19 are rejected under 35 U.S.C. 102(e) as being

anticipated by Miloushev et al. (US 2002/0120763).

Regarding claim 1, Miloushev et al. disclose a layer 4 switch comprising:

a layer 2 switch having a plurality of ports (see paragraphs 122 and 124, the

switch is equipped with multiple high-speed network interfaces; one or more layer 2

switches are used to implement connections between the client network and the file

servers), wherein a third port of the plurality of ports is configured to be in

communication with a client (see paragraph 124, the switch is connected to client

network);

a first server configured to be in communication with a first one of the plurality of

ports (see paragraph 124 and figure 1, file server 1 101 is connected to the switch 100);

and

a second server configured to be in communication with a second one of the

plurality of ports (see paragraph 124 and figure 1, file server 2 102 is connected to the

switch 100);

the first server and the second server configured to function with the layer 2

switch to cause the switch to operate as a layer 4 switch (see paragraphs 123 and 124,

the file switch supports TCP and UDP IP network protocols; therefore, the file servers is

capable of communicating with the file switch as a layer 4 switch);

regarding claim 2, the layer 2 switch is an Ethernet switch (see paragraph 122,

Ethernet interfaces);

regarding claim 3, further comprising an IP layer, a TCP layer, and an Ethernet

layer are configured to operate in accordance with layer 4 switching protocol (see

paragraph 123, TCP and UDP IP network protocols);

regarding claim 4, only one of the first server and the second server can be

active server for accepting new connections from the client (see paragraphs 191, 192,

and 198);

regarding claim 10, further comprising at least one server(s), wherein each one

of the at least one server(s) is adapted to be in communication with a different port of

the plurality of ports (see paragraph 124);

regarding claim 11, each of the at least one server(s) is configured to function

with the first server, the second server, and the layer 2 switch as a layer 4 switch (see

paragraphs 123-124);

   regarding claim 13, the only one of the first server, the second server, and the

at least one server(s) can be an active server such that only the active server accepts

new connections (see paragraphs 191, 192, and 198);

   regarding claim 14, each one of the first server, the second server, and each

one of the at least one server(s) that is not the active server are passive servers (see

paragraphs 191, 192, and 198);

   regarding claim 15, each one of the passive servers continues to process any

previously established session and does not establish a new session (see paragraphs

191, 192, and 198);

   regarding claim 16, if one server of the first server, the second server and the at

least one server(s) becomes configured to be a partially active server for a particular IP

address, then the other servers of the first server, the second server, and the at least

one server(s) are configured to partially be passive for the particular IP address (see

paragraphs 191, 192, and 198);

   regarding claim 17, the first server, the second server, and the at least one

server(s) are configured to determine which server should be the active server (see

paragraph 192);

   regarding claim 18, the first server, the second server, and the at least one

server(s) configured to communicate with each other via the layer 2 switch in order to

determine which server should be the active server (see paragraph 192);

regarding claim 19, the determination of which switch should be the active

switch is based on a comparison of a metric associated with each server (see

paragraph 192).

Claim Rejections - 35 USC § 103

3.   This application currently names joint inventors. In considering patentability of

the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g)

prior art under 35 U.S.C. 103(a).

4.   The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

    1.   Determining the scope and contents of the prior art.
    2.   Ascertaining the differences between the prior art and the claims at issue.
    3.   Resolving the level of ordinary skill in the pertinent art.
    4.   Considering objective evidence present in the application indicating
            obviousness or nonobviousness.

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and

the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6.   Claims 5-9, 12, and 20-32 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Miloushev et al. in view of Tingley et al. (US 2002/0138628).

Regarding claim 20, Miloushev et al. disclose a method of creating a switch

comprising:

establishing a communication path between the plurality of servers and a layer 2

switch such that each one of the plurality of servers is configured to be in

communication with a different port of the layer 2 switch (see paragraphs 122 and 124,

the switch is equipped with multiple high-speed network interfaces; one or more layer 2

switches are used to implement connections between the client network and the file

servers);

configuring the plurality of servers, in cooperation with the layer 2 switch, to

operate collectively as a layer 4 switch, the layer 4 switch configured to be in

communication with a client via one port of the layer 2 switch (see paragraphs 123 and

124, the file switch supports TCP and UDP IP network protocols; therefore, the file

servers is capable of communicating with the file switch as a layer 4 switch).

Miloushev et al. do not disclose a method of configuring the plurality of servers to

each have the same virtual MAC address for the virtual IP address. However, the

invention of Tingley et al. from the same or similar fields of endeavor disclose a method

of configuring plurality of network devices to have the same virtual IP address (see

paragraphs 37-41, it is possible that the same virtual IP address could be used within

Network A and Network B, wherein network devices disntinguish between references to such a duplicated IP addresses when determining mappings between IP addresses and the physical addresses of devices).

Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to implement a method of configuring plurality of network devices to have the same virtual IP address as taught by Tingley et al. into the file switch apparatus of Miloushev et al.

The motivation for implement a method of of configuring plurality of network devices to have the same virtual IP address is that it increases the efficiency of the system.

Regarding claim 23, Miloushev et al. disclose a method, wherein the step of configuring the plurality of servers, in cooperation with the layer 2 switch, to operate collectively as the layer 4 switch comprises configuring each of the plurality of servers such that a TCP layer, an IP layer, and a layer 2 protocol acts as the layer 4 switch (see paragraphs 123 and 124, TCP and UDP IP network protocols);

regarding claims 21 and 25, the step of configuring the plurality of servers, in cooperation with the layer 2 switch, to operate collectively as the layer 4 switch comprises establishing one of the plurality of servers to be an active server and configuring the remaining ones of the first server, the second server, and the at least one server(s) to be passive servers; the active server being configured to be able to set up new connections with the client (see paragraphs 191, 192, and 198);

   regarding claim 22, further comprising the plurality of servers communicating

with each other via the layer 2 switch at configurable intervals and determining whether

the active server should remain the active server or whether another one of the plurality

of servers should become the active server (see paragraphs 191, 192, and 198);

   regarding claim 26, further comprising changing the active server to a different

one of the plurality of servers (see paragraphs 191, 192, and 198);

   regarding claim 27, the step of configuring the plurality of servers, in

cooperation with the layer 2 switch, to cooperate collectively as the layer 4 switch

further comprises configuring each of the plurality of servers such that a TCP layer, an

IP layer, and a layer 2 protocol acts as the layer 4 switch (see paragraphs 123 and 124,

TCP and UDP IP network protocols);

   regarding claims 24 and 28, the layer 2 switch is an Ethernet switch and the

layer 2 protocol is Ethernet (see paragraph 122, Ethernet interfaces).

   Regarding claims 5, 6, and 12, Miloushev et al. disclose all the subject matter

of the claimed invention except the layer 4 switch, wherein the first server and the

second server are configured to share a virtual IP address and to respond to an ARP

request for the virtual IP address with a virtual MAC address.

   However, the invention of Tingley et al. from the same or similar fields of

endeavor disclose an apparatus, wherein plurality of network devices share the same

virtual IP address and respond to a request for the virtual IP address with a MAC

address (see paragraphs 37-41, it is possible that the same virtual IP address could be

used within Network A and Network B, wherein network devices disntinguish between references to such a duplicated IP addresses when determining mappings between IP addresses and the physical addresses of devices, and network devices map between IP addresses and physical addresses, wherein physical addresses refer to Ethernet/MAC addresses).

Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to implement a method of configuring plurality of network devices to have the same virtual IP address and respond to a request for the virtual IP address with a MAC address as taught by Tingley et al. into the file switch apparatus of Miloushev et al.

The motivation for implementing a method of configuring plurality of network devices to have the same virtual IP address and respond to a request for the virtual IP address with a MAC address is that it increases the efficiency of the system.

Regarding claim 7, Mishoulev et al. disclose the only one of the first server and the second server can be an active server such that only the active server accepts new connections (see paragraphs 191, 192, and 198);

regarding claim 8, at least one of the first server and the second server is a passive server such that the passive server drops all inbound packets having the virtual IP address with a SYN flag set (see paragraphs 191, 192, and 198);

regarding claim 9, at least one of the first server and the second server is a

passive server, the passive server continues to process a previously established

session and does not establish a new sessions (see paragraphs 191, 192, and 198).

Regarding claim 29, Mishoulev et al. disclose a switch comprising:

a plurality of servers (see figure 1, file servers 1-7);

a layer 2 switch having a plurality of ports (see paragraphs 122 and 124, the

switch is equipped with multiple high-speed network interfaces; one or more layer 2

switches are used to implement connections between the client network and the file

servers), one of the plurality of ports being for communicating with a client (see

paragraph 124, the switch is connected to client network);

a communication path between each one of the plurality of servers and the

plurality of ports such that a subnetwork is created between the plurality of servers (see

paragraphs 122 and 124, the switch is equipped with multiple high-speed network

interfaces; one or more layer 2 switches are used to implement connections between

the client network and the file servers);

the plurality of servers being configured to operate collectively with the layer 2

switch so that the switch operates as a layer 4 switch (see paragraphs 123 and 124, the

file switch supports TCP and UDP IP network protocols; therefore, the file servers is

capable of communicating with the file switch as a layer 4 switch), wherein only one of

the plurality of servers is designated as an active server that establishes new

connections with the client (see paragraphs 191, 192, and 198, only one server is in the

active state at any given time; when the server is active, it communicates with the file switch, which communicates with the client network), the plurality of servers utilizing the subnetwork at configured intervals to aid in a determination of which server should become the active server (see paragraphs 183, 191, 192, and 198, when the active server fills up, another server changes its state to active state based on a computational algorithm).

Miloushev et al. do not disclose the layer 4 switch, wherein each server are configured to share a virtual IP address and a configurable MAC address for the virtual IP address. However, the invention of Tingley et al. from the same or similar fields of endeavor disclose an apparatus, wherein plurality of network devices share the same virtual IP address and respond to a request for the virtual IP address with a MAC address (see paragraphs 37-41, it is possible that the same virtual IP address could be used within Network A and Network B, wherein network devices disntinguish between references to such a duplicated IP addresses when determining mappings between IP addresses and the physical addresses of devices, and network devices map between IP addresses and physical addresses, wherein physical addresses refer to Ethernet/MAC addresses).

Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to implement a method of configuring plurality of network devices to have the same virtual IP address and respond to a request for the virtual IP address with a MAC address as taught by Tingley et al. into the file switch apparatus of Miloushev et al.

The motivation for implementing a method of configuring plurality of network devices to have the same virtual IP address and respond to a request for the virtual IP address with a MAC address is that it increases the efficiency of the system.

Regarding claim 30, the determination of which one of the plurality of servers should become the active server is based on a comparison of at least one metric of each one of the plurality of servers (see paragraphs 183 and 192);

regarding claim 31, the plurality of servers, in combination with the layer 2 switch, are configured to establish an IP layer, a TCP layer, and a subnetwork layer to act as a layer 4 switch (see paragraph 123, TCP and UDP IP network protocols);

regarding claim 32, the subnetwork is Ethernet (see paragraph 122).

Response to Arguments

7.   Applicant's arguments filed 10/12/2007 have been fully considered but they are not persuasive.

On page 2 of the remarks, the applicants submit that Miloushev fails to teach or suggest the feature "a first server and a second server configured to function with layer 2 switch to cause the switch to operate as a layer 4 switch." The examiner respectfully disagrees. There is no specific structure or definition of the limitation "layer 4 switch" defined in the claim. Therefore, the examiner is entitled to interpret the claim as broad as possible. Layer 4 of the OSI layer provides transparent transfer of data between end users, wherein some of the layer 4 protocols are TCP and UDP. In paragraphs 123-124,

Miloushev discloses that the file switch preferably supports TCP and UDP IP network protocols; Miloushev also discloses that the file switch is connected directly to each of the file servers, wherein one or more layer 2 switches are preferably used. Therefore, Miloushev discloses that the layer 2 file switch supports TCP and UDP protocols to communicate with each of the file servers, which reads on the claimed feature "a first server and a second server configured to function with layer 2 switch to cause the switch to operate as a layer 4 switch."

Therefore, in view of the above reasoning, the examiner believes that the prior art rejections should be sustained.

Conclusion

8.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9.   Examiner's Note: Examiner has cited particular columns and line numbers in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

In the case of amending the claimed invention, Applicant is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure relied on for proper interpretation and also to verify and ascertain the metes and bounds of the claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pao Sinkantarakorn whose telephone number is 571-270-1424. The examiner can normally be reached on Monday-Thursday 9:00am-3:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on 571-272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PS

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SUPERVISORY PATENT EXAMINER